(417) 882-2900
(800) 658-0227
2900 S. NATIONAL AVE.
P.O. BOX 3795
SPRINGFIELD, MO 65808

JOBIE GOSLEE

Springfield Medical Laboratory
Regional Pathology Services, Inc.

ty of Springfield
ollution Control Section
Pollution Complaint/Report Form

Date 8/23/91

Report From:
☒ Citizen ANONYMOUS
☐ Fire Dept
☐ Sewer Maintenance
☐ Other

Received By: Bob Schaefer
Referred To: R. LYMAN / G. PABST
Date of Incident: ONGOING

Complainant Information:
Name ANONYMOUS
Address
Phone
Directions (if needed)

Responsible Party Information:
Name SPRINGFIELD MEDICAL LABORATORY
Address 2900 S. NATIONAL
Phone 882-2900

5:00 A.M.

Possible contamination of: ☐ soil ☐ groundwater ☐ surface water what body? ☒ other SANITARY SEWER

Other Pertinent Information

Who to contact: 895-6950
☒ DNR 417-~~883-4033~~
☐ DNR 314-634-2436
☐ EPA 913-236-3378
☐ Fire Dept 864-1719
☐ Police Dept 864-1719
☐ Bob Schaefer
☐ CU 831-8320
☐ Street Dept
☒ Health Dept
☐ Sewer Maint
☐ Sewer Const
☐ Chemtrec 800-424-9300
☐ DOT
☐ NRC 312-790-5500
☐ Other

Details of Incident: MEDICAL LABORATORY DUMPS 1 BARREL OF XYLENE DOWN SEWER ON SATURDAYS, TRICKLED IN UNTIL EMPTY. USED FOR PAP SMEAR AND TISSUE TESTING. EMPLOYEES SUFFER FROM BURNING EYES, NAUSEA ETC.

#1664

Action needed: GET WITH JOE HARMAN OF HEALTH DEPT. FOR JOINT INSPECTION. 215 KG/MONTH OR 33 POUNDS MUST BE REPORTED TO EPA, DNR & DOTW. 2100 KG/MONTH OR 220 POUNDS MUST INCLUDE ADDITIONAL INFORMATION REPORTED TO EPA, DNR & DOTW. MUST COMPLY WITH 40 CFR 403, SECTION 403.5 (b)(1) + 140°F FLASH POINT AND FIRE OR EXPLOSION HAZARD. AND/OR 403.5 (b)(7): VAPORS AND FUMES. ALSO CHAPTER 30 PROHIBITIONS MAY PERTAIN.
ALSO CALL CHUCK KRUEGER, 895-6650, AND THEY WILL SEND AN INSPECTOR ALONG FOR INSPECTION.

2900 S. National

R.

Investigation Results

On Friday Aug. 30, 1991 Karen Chandler & I met Chuck Kroeger, D.N.R., at Spfld Medical Laboratory at 9:00 A.M. We talked to Jobie Gostee and Laura Meyer. They explained that they did try to dump some down the drain on Sat. Aug. 24. Mr. Gostee said that they he did it. Laura Meyer explained that she had talked to OSHA, E.P.A. & D.N.R. about putting it down the drain. All the Agencies told her that if she only generated 3-4 gallons a week she could dump it down the sanitary sewer. She did not contact this office. They have apparently accumulated a full drum of xylene over the past year and a half. Chuck informed them that since they had a full drum this would be a regulated quantity. The amount of xylene used in a week for slides is approximately 7000 ml. Each tray that xylene is used in contains 500-750 ml. They dump 2/day & 4/week (10x500 = 5000ml, 4x500 = 2000 ml, 5000 + 2000 = 7000 ml/week). We told them that if they would dump these small quantities down the sanitary sewer as they use the material, we would have no problem with that. Chuck Kroeger told them he would provide them with a list of Haz. Waste haulers & get them the necessary paper work. We gave them some information on reporting to the POTW haz. waste dumped to the sanitary sewer and provided them with a reporting form.

Steve Fabst

April 23, 1979

Mr. Bill Weber, Terminal Manager
Ellex Transportation Company
Mt. Vernon, Missouri 65712

Dear Mr. Weber:

Enclosed please find a copy of the letter sent to you requesting payment of the costs incurred by the City of Springfield for cleanup of a gasoline spill (12-22-78) at the Git-N-Go Store at the corner of National and Guinevere. Also, please find the enclosed itemized bill.

Some time has passed since this bill was sent to you and as of the writing of this letter the City has not received payment for these expenses. Please be advised that this matter will be turned over to the City Attorney for appropriate action if this office does not receive payment in full within fifteen (15 days from the date of this letter.

If you have any questions, please feel free to call.

Yours truly,

Gene Pabst
Water Pollution Control Inspector III
Surveillance and Enforcement

GP:pg

Enclosures

cc: Mr. Robert R. Schaefer, P.E., Superintendent of Sanitary Services
Mr. Howard Wright, City Attorney

SPRINGFIELD MEDICAL LABORATORY
2900 S. NATIONAL P.O. BOX 3795
SPRINGFIELD, MO 65808-3795
TEL 417-882-2900 WATS 800-658-0227
FAX 417-883-7084

PATHOLOGISTS

A.C. RABORAR, M.D., F.C.A.P. F.A.S.C.P.
N.R. LEWIS, M.D., F.C.A.P. F.A.S.C.P.

C.A.P. Inspected and Certified

Medicare and Medicaid Approved

SERVICES

Blood Bank
Chemistry
Coagulation
Cytology
Drug Monitor (Therapeutic)
Drugs of Abuse Screens
Hematology
Histology
Microbiology
Necropsy
Isotopes
Serology
Toxicology
Urinalysis

Clinical & Surgical Consultation

Daily Courier Service

Phlebotomy Service

SEP 09 1991

Sept. 6, 1991

Gene Pabst
Department of Public Works
830 Boonville Ave.
Springfield Mo 65802

Thanks for your visit the other day. It is reassuring to know first hand what we should and should not do. If this form is not correct I'll be glad to redo it.

Today I received instructions from Charles Kroeger on how to dispose of the 55 gallons of accumulated xylene. We will comply fully with his instructions.

Jobie V. Goslee
Springfield Medical Lab

cc: Laura Myers

2900 S. National

HAZARDOUS WASTE NOTIFICATION

SEP 09 1991

Company Name Springfield Medical Lab

Address 2900 S. National

City Springfield State Mo. Zip Code 65804

Contact Person Laura Myers Title Lab Manager

Phone (417) 882-2900

Name of Publicly Owned Treatment Works

NPDES Permit #

Address

City State Zip Code

HAZARDOUS WASTE INFORMATION (use additional sheets if necessary)

Name of Waste: Xylene

EPA Hazardous Waste Number:

TYPE OF DISCHARGE:

___Continuous X Batch 1400 Ml daily 2800 Ml weekly ___ Other ___

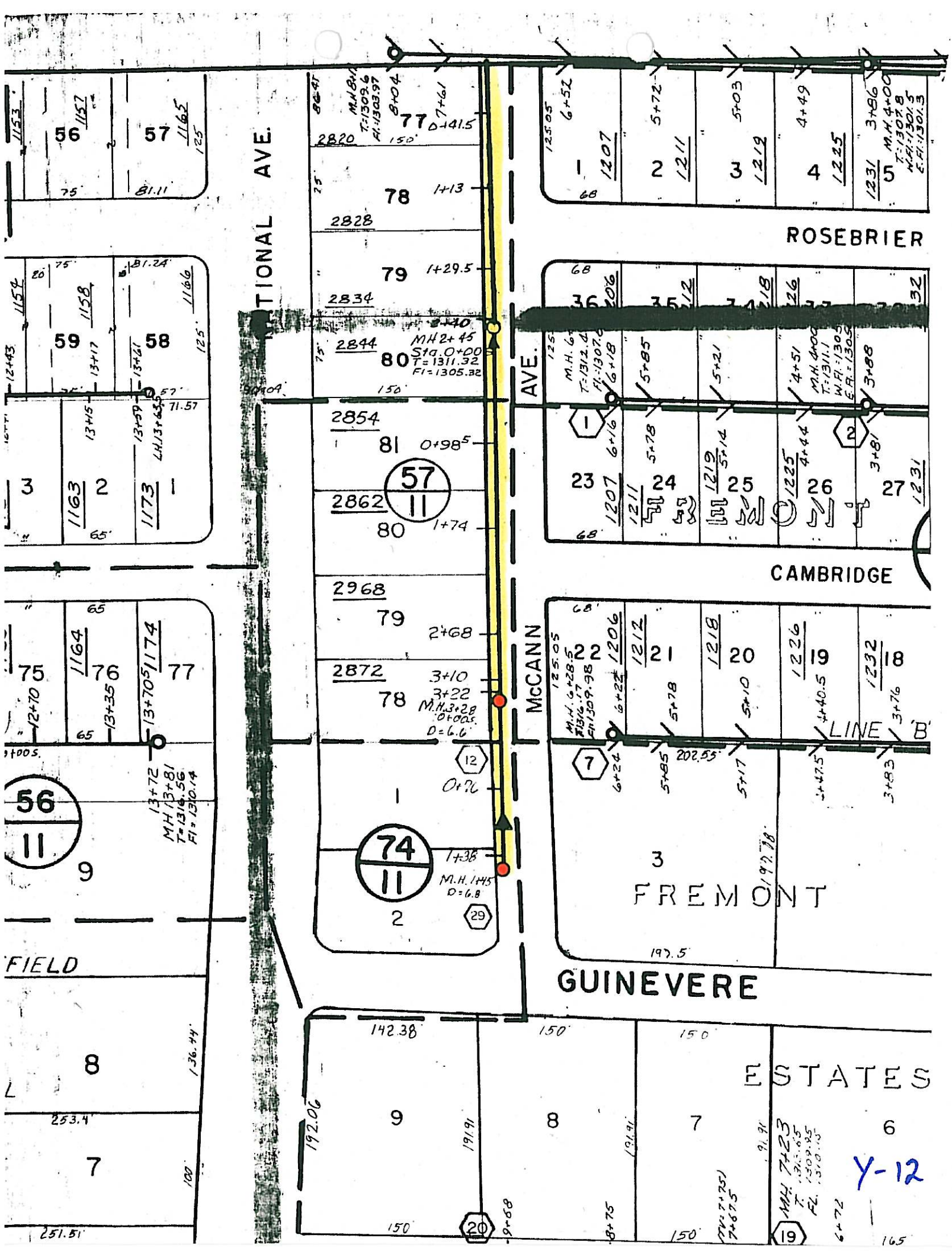
IF MORE THAN 100 KILOGRAMS OF ANY HAZARDOUS WASTE PER CALENDAR MONTH IS DISCHARGED TO THE SEWER, PLEASE INCLUDE THE FOLLOWING ITEMS OF INFORMATION FOR EACH HAZARDOUS WASTE, TO THE EXTENT SUCH INFORMATION IS KNOWN AND READILY AVAILABLE.

Hazardous Constituent Information:

Name of Constituent	Mass in Wastestream (this month)	Concentration in Wastestream (this month)	Mass in Wastestream (next 12 months)
Xylene	42.14L or 11.13 gal.		505.68L or 133.56gal.

I certify that I have a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree I have determined to be economically practical.

Signature of Company Representative Debbie Whaley Date 9-5-91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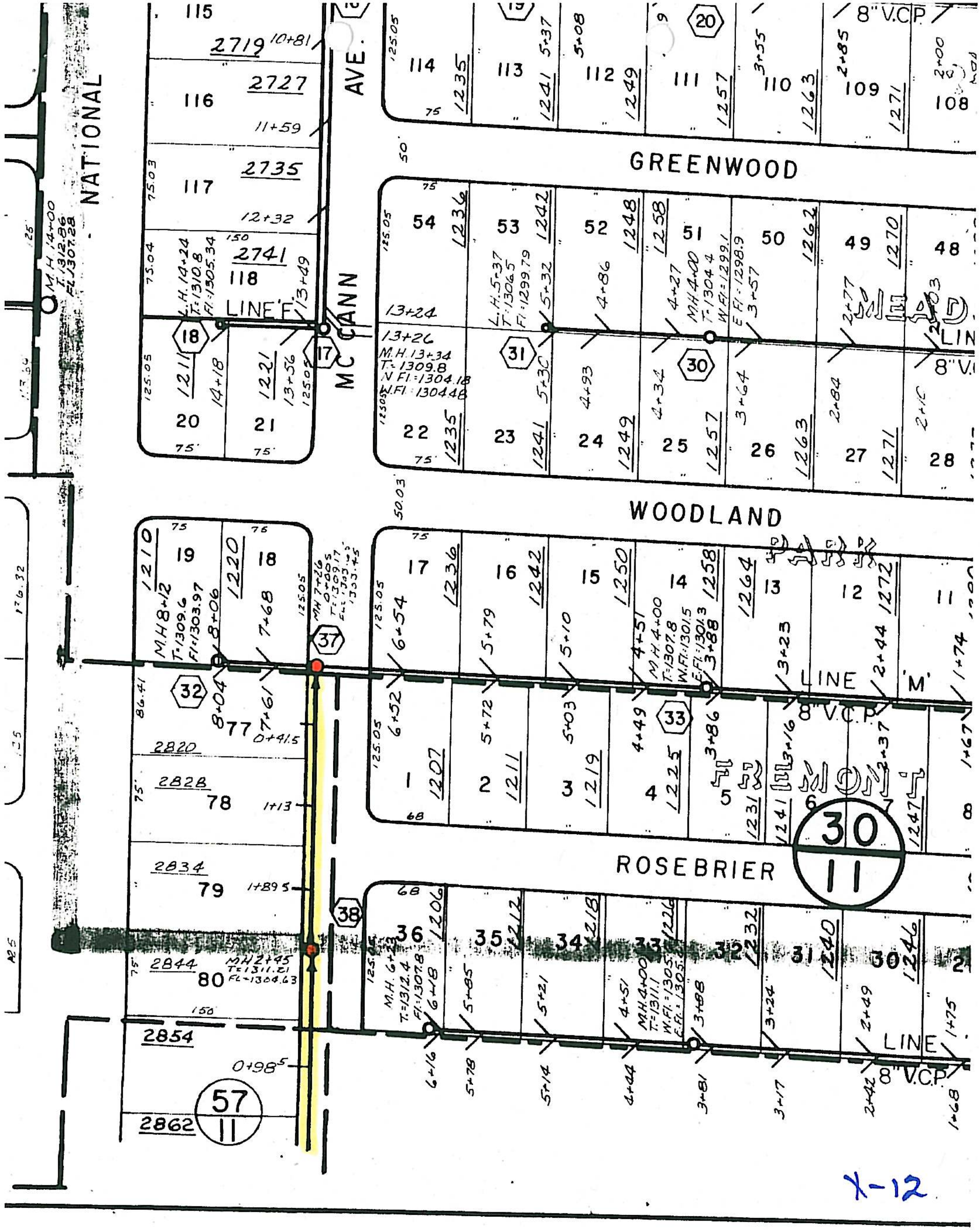
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M.H. 13+34
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W.FL. 1304.48
L.H. 5+37
T. 1306.5
FL. 1299.79
M.H. 4+00
T. 1304.4
W.FL. 1299.1
E.FL. 1298.9
M.H. 8+12
T. 1309.6
FL. 1303.97
M.H. 4+00
T. 1307.8
W.FL. 1301.5
E.FL. 1301.3
MH 2+45
T. 1311.21
FL. 1304.63
M.H. 6+23
T. 1312.4
FL. 1307.8
M.H. 4+00
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X-12

Gene, file ?

CITY of SPRINGFIELD

COPY

January 10, 1996

Ms. Teresa Weeks, Safety Officer
Medical Arts Laboratory
2900 S. National
Springfield, Mo 65808

Subject: Laboratory Waste Disposal Request

Dear Ms. Weeks:

In response to your request dated January 4, 1996 for approval of the disposal of wastes generated by your facility, the following determination has been made. Based on the information submitted it appears that the only substance that is acceptable for discharge to the Publicly Owned Treatment Works(POTW) would be the 3.7% solution of formaldehyde in water followed by copious amounts of water. All of the alcohol based stains and solvents appear to exhibit flashpoint determinations of less than 140 degrees Farenheit. Federal, State, and local wastewater regulations strictly prohibit the introduction of materials into the POTW exhibiting a flashpoint of less than 140 degrees Farenheit. These materials present a serious threat to creating fire and explosion hazards and worker health and safety hazards within the POTW and sewer lines serving your facility. We would advise you to solicit the services of companies involved in the management and disposal of hazardous wastes through the use of "lab-packs" or similar disposal options. If you have any questions or I can answer any questions, please let me know.

Sincerely yours,

J. Randall Lyman

J. Randall Lyman
Sewer Surveillance & Billing Supervisor

PRETREATMENT PROGRAM

1216 W. Nichols St. • Springfield, Missouri 65802
417-864-1487 • fax: 417-864-1918

DEPARTMENT OF PUBLIC WORKS
840 BOONVILLE AVENUE, P.O. BOX 8368 SPRINGFIELD, MISSOURI 65801-8368
(417) 864-1900

2900 S. National

Med Arts Lab®

Medical Arts Laboratory®
1111 NORTH LEE - OKLAHOMA CITY, OK 73103-2620

OKLAHOMA CITY OFFICES

Pasteur Medical Building
1111 North Lee
(405) 239-7111
(800) 733-5221
FAX (405) 278-2722

Physicians & Surgeons Building
1211 North Shartel, Suite 105

13509 North Meridian, Suite 5

Baptist Medical Plaza, Building A
3435 Northwest 56th Street, Suite 406

Baptist Medical Plaza, Building B
3433 Northwest 56th Street, Suite 500

Southwest Medical Tower
1044 Southwest 44th Street, Suite 203

TULSA OFFICE

3233 E. 31, Suite 102
Tulsa, OK 74105
(918) 747-7506
(800) 722-0721
FAX (918) 742-3860

WICHITA OFFICE

2020 N. Woodlawn, Suite 350
Wichita, KS 67208
(316) 686-8378
FAX (316) 687-0126

MISSOURI OFFICES

2900 South National Avenue
Springfield, MO 65808
(417) 882-2900
(800) 658-0227
FAX (417) 883-7084

1211 Porter Wagoner Blvd.
West Plains, MO 67775
(417) 256-0880

ARKANSAS OFFICE

1722 W. Sunset, Suite 3
Springdale, AR 72765
(501) 750-9393
FAX (501) 750-9594

LOUISIANA OFFICE

10555 Lake Forest Blvd, Suite 5J
New Orleans, LA 70127
(504) 242-5064
FAX (504) 242-4134

AFFILIATED LABORATORIES

Ada, OK
Amarillo, TX
Lawton, OK
McAlester, OK
Midwest City, OK
Pampa, TX
Ponca City, OK
Stillwater, OK
Wichita Falls, TX

January 4, 1996

Randy Lyman
Sanitary Services
Springfield Public Works
City Hall
PO Box 8368
Springfield Mo 65801

Dear Mr. Lyman:

As per our phone conversation of Dec. 27, 1995, I am requesting permission to discard certain chemicals into our municiple sewage system. Our histology/cytology laboratory generates formalin and biological stain waste in the following rates.

Formalin - an aqueous solution of 3.7% formaldehyde in water - - - - - - approximately 6 gal./a week.

Eosin Y - an alcohol based stain, pink in color. Flammable - - - - - - 1/2 gal/a week.

EA-50 - an alcohol based stain, green in color. Flammable - - - - - - 1/2 gal/week.

Orange G-6 - an alcohol based stain, orange in color, flammable - - - - - 1/2 gal/month.

Gill 2 hematoxylin - an alcohol based stain, purple in color, combustible - - - - 1/2 gal./ month.

Harris Hematoxylin - an alcohol based stain - purple in color, combustible - - - - 1/2 gal./mo.

Flex 100 - Reagent grade alcohol blend, clear liquid, flammable - - - - 6-8 gal/week.

Xylene - reagent grade xylene/solvent, clear liquid, flammable - - - - 6-8 gal/week.

Americlear - D'Limolene blend/solvent, clear liquid, combustible - - - - 1 gal/week.

I am enclosing the material safety data sheets for these products.

Although you gave me tentative verbal approval for drain disposal, we need written permission for our records. If you have any questions, please call me at (417) 882-2900.

Thank you for your prompt attention to this matter.

Sincerely,

Teresa Weeks

Teresa Weeks
Safety Officer

cc: Trish Gurasci
Martha Huff

Enclosure

Material Safety Data Sheet

CLiNaK Potas[illegible]m Electrode, B6110-202
(Contains Potassium Electrode Fill Solut, B6110-227)

Identity (Trade Name As Used On Label)

Baxter Diagnostics Inc.

Manufacturer

9500 Jeronimo Rd.

Address

Irvine, CA 92718-2017

Phone Number (For Information)

800-872-3233

Emergency Phone Number 714-458-3227 Telex*

B6110-202

MSDS Number*

Mixture

CAS Number*

April 22, 1991

Date Prepared

BDIPCASV

Prepared By*

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS — Chemical Name & Common Names (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	%	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED
Formaldehyde (CAS # 50-00-0)	0.16	1 ppm	1 ppm	2 ppm STEL
Non-Hazardous Ingredients	99.84			
TOTAL	100			

SECTION 2 - PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point	Approx. 100 C/212 F	Specific Gravity (H_2O = 1)	NA
Vapor Pressure (mm Hg and Temperature)	NA	Melting Point	Approx. 0 C/32 F
Vapor Density (Air = 1)	NA	Evaporation Rate (_____ = 1)	NA
Solubility in Water	100 %	Water Reactive	Non-Reactive

Appearance and Odor: Clear, colorless, free-flowing liquid with mild odor.

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method Used	NA	Auto-Ignition Temperature	NA	Flammability Limits in Air % by Volume	LEL	NA	UEL NA

Extinguisher Media: Water, dry chemical, carbon dioxide.

Special Fire Fighting Procedures: None

Unusual Fire and Explosion Hazards: Fire or excessive heat may produce hazardous decomposition products.

*Optional

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY ☒ Stable ☐ Unstable	Conditions To Avoid: None
Incompatability (Materials to Avoid)	Water-reactive materials, strong oxidizer, strong acids, & strong bases.
Hazardous Decomposition Products	Formic acid, carbonmonoxide, carbon dioxide may evolve upon burning.
HAZARDOUS POLYMERIZATION ☐ May Occur ☒ Will Not Occur	Conditions To Avoid: None

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY	☒ Inhalation	☐ Ingestion	**CARCINOGEN LISTED IN**	☒ NTP	☒ OSHA
	☒ Skin Absorption	☐ Not Hazardous		☒ IARC Monograph	☐ Not Listed

HEALTH HAZARDS Acute	Formaldehyde - Severe eye, skin, & respiratory irritant. Ingestion may cause digestive system discomfort.
Chronic	Formaldehyde - Skin sensitizer. Suspect human carcinogen & mutagen. May cause respiratory disorders.
Signs and Symptoms of Exposure	Sore throat, coughing, shortness of breath.
Medical Conditions Generally Aggravated by Exposure	Skin, eye, respiratory, liver, or kidney disorders may be aggravated.

EMERGENCY FIRST AID PROCEDURES - Seek medical assistance for further treatment, observation and support if necessary.

Eye Contact	Flush eyes with water for 15 minutes and get immediate medical attention.
Skin Contact	Flush skin with water for 15 minutes and get medical attention if skin irritation is present after flushing.
Inhalation	Remove person to fresh air. Seek medical attention if symptoms of over exposure persist.
Ingestion	Call a local poison control center and obtain immediate medical attention.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (Specify Type)	Gas mask or SCBA in the absence of adequate ventilation.		
Protective Gloves	PVC or neoprene.	Eye Protection: Chemical goggles	
VENTILATION TO BE USED	☐ Local Exhaust NA	☒ Mechanical (general)	☐ Special NA
	☐ Other (specify) NA		
Other Protective Clothing and Equipment	Lab coat or apron to protect against spills or splashing.		
Hygienic Work Practices	Avoid contact with skin and eyes. Use with adequate ventilation.		

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE / LEAK PROCEDURES

Steps to be Taken If Material Is Spilled Or Released	Small spills can be absorbed and placed in an appropriate container for proper disposal.
Waste Disposal Methods	Observe all federal, state, and local laws governing the disposal of waste chemicals.
Precautions to be Taken in Handling and Storage	Store in cool location.
Other Precautions and/or Special Hazards	This product contains formaldehyde which is known to the State of California to cause cancer, birth defects, or other reproductive harm.

NFPA Rating*	Health 2	Flammability 1	Reactivity 0	Special	HMIS Rating*	Health 2*	Flammability 1	Reactivity 0	Personal Protection

*Optional

Receipt No. 22172

IDENTIFICATION

Product Name: Eosin Y Alcoholic

Date: May 1993
Supercedes: June 1991

Manufacturer/Distributor: Shandon Inc.
171 Industry Drive
Pittsburgh, PA 15275

Product Information Phone: 1-800-245-6212
24 Hour Emergency Contact: USA CHEM-TEL INC. 1-800-255-3924
outside USA CHEM-TEL INC. (813) 979-0626

INGREDIENTS	CAS NO.	LD_{50}
Methanol	67-56-1	5628 mg/kg, rat, oral
Less than 1%: Eosin Y	548-26-5	Not available
Glacial acetic acid	64-19-7	3530 mg/kg, rat, oral

PHYSICAL DATA

Boiling Point:	≃160°F (≃ 71.1°C)
Specific Gravity:	0.86
Vapor Density (air=1):	>1
Appearance:	Orange-pink liquid with fluorescent green cast.
Odor:	Characteristic methanol
Solubility in Water:	Complete
Evaporation Rate (Butyl Acetate=1):	Not known

FIRE AND EXPLOSION DATA

Flash Point:	72° F (open cup) 22.2° C
Fire and Explosion Hazards:	Flammable liquid. Vapors are heavier than air and travel along ground to an ignition source and flash back to vapor source.
Extinguishing Media:	Use dry chemical or carbon dioxide for small fires. Use "alcohol" type foam for large fires.
Special Fire Fighting Instructions:	Do not use ordinary foam. Application of water fog/spray will aid in keeping fire-exposed materials cool. Use self-contained breathing apparatus to prevent exposure to products of combustion.

REACTIVITY DATA

Materials/Conditions to Avoid:	Strong oxidants. Avoid sources of ignition, such as heat, sparks, and flames. Avoid strong alkali or acids which will alter the staining characteristics of this solution.
Hazardous Decomposition Products:	Incomplete combustion may produce carbon dioxide and/or carbon monoxide.
Hazardous Polymerization:	Does not occur.

HEALTH HAZARD DATA

Airborne Exposure Limit:	200 ppm
Symptoms of Overexposure:	Inhalation of high concentrations of vapors may irritate respiratory tract and produce narcosis. Liquid contact causes eye irritation and drying of skin. Absorption thru skin from prolonged or repeated exposures causes toxic effects. Ingestion causes dizziness, headaches, visual disturbance and damage, and possibly death.

Personal Protective Procedures

Eye Protection:	Use chemical, splashproof goggles.
Skin Protection:	Use chemical resistant gloves or other clothing to prevent skin contact.
Respiratory Protection:	If airborne concentration is beyond acceptable level, use appropriate NIOSH approved respirator.
Ventilation:	General room, ventilation is usually adequate. Mechanical ventilation should be explosion proof.

First Aid Procedures

Eye:	Immediately flush eyes with lukewarm water for at least 15 minutes.
Skin:	Remove contaminated clothing. Wash skin with mild soap and water. Flush 15 minutes with water.
Inhalation:	If overcome by exposure, remove the person to fresh air. Administer oxygen or CPR as needed.
Ingestion:	Contact poison center and obtain medical attention immediately.

STORAGE, SPILLS, AND DISPOSAL DATA

Handling and Storage:	Store containers in areas approved for flammables. Do not handle or store near heat, sparks, flames or strong oxidants. Keep containers closed when not in use.
Spill Procedure:	Eliminate all sources of ignition. Soak up small spills with paper towels. Evaporate in a fume hood and burn the paper. Large spills should be contained and collected for disposal.
Waste Disposal:	Incinerate where permitted, otherwise, follow local State, or Federal regulations.

The information provided in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is intended for use by persons having technical skill and is to be used at their own discretion and risk.

IDENTIFICATION

Product Name: EA 50

Date: March 1993
Supercedes: January 1991

Manufacturer/Distributor: Shandon Inc.
171 Industry Drive
Pittsburgh, PA 15275

Product Information Phone: 1-800-245-6212
24 Hour Emergency Contact: USA CHEM-TEL INC. 1-800-255-3924
outside USA CHEM-TEL INC. (813) 979-0626

INGREDIENTS

	CAS NO.	LD_{50}
Methanol	67-56-1	5628 mg/kg, rat, oral
Ethylene glycol	107-21-1	4700 mg/kg, rat, oral
Less than 1%: Eosin Y	548-26-5	Not available
Light Green SF, Yellowish (carcinogen)	5141-20-8	700 mg/kg, mouse, ivn
Phosphotungstic acid	1343-93-7	Not available
Glacial acetic acid	64-19-7	3530 mg/kg, rat, oral

PHYSICAL DATA

Boiling Point:	≈204°F (≈95.5°C)
Specific Gravity:	0.918
Vapor Density (air=1):	>1
Appearance:	Dark green with pink cast.
Odor:	Characteristic alcohol
Solubility in Water:	Complete
Evaporation Rate (Butyl Acetate=1):	>1

FIRE AND EXPLOSION DATA

Flash Point: 76°F (open cup method) (24.4°C)

Fire and Explosion Hazards: Flammable liquid. Vapors are heavier than air and travel along ground to an ignition source and flash back to vapor source.

Extinguishing Media: Use carbon dioxide or dry chemical for small fires. Use alcohol type foam for large fires.

Special Fire Fighting Instructions: Do not use ordinary foam. Application of water fog/spray will aid in keeping fire-exposed materials cool. An approved self-contained breathing apparatus should be worn to prevent exposure to products of combustion.

REACTIVITY DATA

Materials/Conditions to Avoid: Strong oxidants. Avoid sources of ignition, such as heat, sparks, and flames.

Hazardous Decomposition Products: Incomplete combustion may produce carbon dioxide and/or carbon monoxide.

Hazardous Polymerization: Does not occur.

HEALTH HAZARD DATA

Airborne Exposure Limit:	50 ppm
Symptoms of Overexposure:	Inhalation of high concentrations of vapors may irritate respiratory tract and produce narcosis. Liquid contact causes eye irritation and drying of skin. Absorption thru skin from prolonged or repeated exposures cause toxic effects. Ingestion causes dizziness, headaches, visual disturbance and damage, central nervous system depression, and possibly death. Light green, SF yellowish is a reported carcinogen.

Personal Protective Procedures

Eye Protection:	Use chemical, splashproof goggles.
Skin Protection:	Use chemical resistant gloves or other clothing to prevent skin contact.
Respiratory Protection:	If airborne concentration is beyond acceptable level, use appropriate NIOSH approved respirator.
Ventilation:	General room ventilation is usually adequate. Mechanical ventilation should be explosion proof.

First Aid Procedures

Eye:	Immediately flush eyes with lukewarm water for at least 15 minutes.
Skin:	Remove contaminated clothing. Wash skin with mild soap and water. Flush 15 minutes with water.
Inhalation:	If overcome by exposure, remove the person to fresh air. Administer oxygen or CPR as needed.
Ingestion:	Contact poison center and obtain medical attention immediately.

STORAGE, SPILLS, AND DISPOSAL DATA

Handling and Storage:	Store containers in areas approved for flammables. Do not handle or store near heat, sparks, flames or strong oxidants. Keep containers closed when not in use.
Spill Procedure:	Eliminate all sources of ignition. Soak up small spills with paper towels. Evaporate in a fume hood. Burn the paper toweling. Large spills should be contained and collected for disposal.
Waste Disposal:	Incinerate where permitted by Federal, State, and local regulations. Incinerator should be equipped with afterburner and scrubber.

The information provided in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is intended for use by persons having technical skill and is to be used at their own discretion and risk.

SHANDON LIPSHAW MATERIAL SAFETY DATA SHEET

IDENTIFICATION

Product Name: Orange G-6

Date: January 1994
Supercedes: March 1993

Manufacturer/Distributor: Shandon Inc.
171 Industry Drive
Pittsburgh, PA 15275

Product Information Phone: 1-800-245-6212
24 Hour Emergency Contact: USA CHEM-TEL INC. 1-800-255-3924
outside USA CHEM-TEL INC. (813) 979-0626

INGREDIENTS

	CAS NO.	LD_{50}
Ethylene glycol	107-21-1	4700 mg/kg, rat, oral
Methanol	67-56-1	5628 mg/kg, rat, oral
Less than 1%: Orange G-6	1936-15-8	Not available
Phosphotungstic acid	12501-23-4	Not available
Glacial acetic acid	64-19-7	3530 mg/kg, rat, oral

PHYSICAL DATA

Boiling Point:	≃210°F (≃98.9°C)
Specific Gravity:	0.913
Vapor Density (air=1):	>1
Appearance:	Orange liquid
Odor:	Mild alcohol odor
Solubility in Water:	Complete
Evaporation Rate (Butyl Acetate=1):	>1

FIRE AND EXPLOSION DATA

Flash Point: 76°F (open cup method) (24.4°C)

Fire and Explosion Hazards: Flammable liquid. Vapors are heavier than air and travel along ground to an ignition source and flash back to vapor source.

Extinguishing Media: Use carbon dioxide or dry chemical for small fires. Use alcohol type form for large fires.

Special Fire Fighting Instructions: Application of water fog/spray will aid in keeping fire-exposed materials cool. An approved self-contained breathing apparatus should be worn to prevent exposure to products of combustion.

REACTIVITY DATA

Materials/Conditions to Avoid: Strong oxidants. Avoid sources of ignition such as heat, sparks, and flames.

Hazardous Decomposition Products: Incomplete combustion may produce carbon dioxide and/or carbon monoxide.

Hazardous Polymerization: Does not occur.

HEALTH HAZARD DATA

Airborne Exposure Limit:	50 ppm
Symptoms of Overexposure:	Inhalation of high concentrations of vapors may irritate respiratory tract and produce narcosis. Liquid contact causes eye irritation and drying of skin. Absorption through skin from prolonged or repeated exposures cause toxic effects. Ingestion causes dizziness, headaches, visual disturbance and damage, central nervous system depression, and possibly death.
Personal Protective Procedures	
Eye Protection:	Use chemical, splashproof goggles.
Skin Protection:	Use chemical resistant gloves or other clothing to prevent skin contact.
Respiratory Protection:	If airborne concentration is beyond acceptable level, use appropriate NIOSH approved respirator.
Ventilation:	General room ventilation is usually adequate. Mechanical ventilation should be explosion proof.
First Aid Procedures	
Eye:	Immediately flush eyes with lukewarm water for at least 15 minutes.
Skin:	Remove contaminated clothing. Wash skin with mild soap and water. Flush 15 minutes with water.
Inhalation:	If overcome by exposure, remove the person to fresh air. Administer oxygen or CPR as needed.
Ingestion:	Contact poison center and obtain medical attention immediately.

STORAGE, SPILLS, AND DISPOSAL DATA

Handling and Storage:	Store containers in areas approved for flammables. Do not handle or store near heat, sparks, flames or strong oxidants. Keep containers closed when not in use.
Spill Procedure:	Eliminate all sources of ignition. Small spills should be absorbed with paper toweling. Evaporate in a fume hood. Incinerate the paper. Large spills should be contained and collected for disposal.
Waste Disposal:	Incinerate where permitted by Federal, State, and local regulations. Incinerator should be equipped with afterburner and scrubber.

The information provided in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is intended for use by persons having technical skill and is to be used at their own discretion and risk.

SHANDON LIPSHAW _ ATERIAL SAFETY DATA SH_ET

IDENTIFICATION

Product Name: Harris Hematoxylin (Unacidified)

Date: September 1993
Supercedes: July 1991

Manufacturer/Distributor: Shandon Inc.
171 Industry Drive
Pittsburgh, PA 15275

Product Information Phone: 1-800-245-6212
24 Hour Emergency Contact: USA CHEM-TEL INC. 1-800-255-3924
outside USA CHEM-TEL INC. (813) 979-0626

INGREDIENTS

	CAS NO.	LD_{50}
Denatured ethanol	64-17-5	7060 mg/kg, rat, oral
Less than 1%: Hematoxylin	517-28-2	Not available
Alum ammonium sulfate	7784-26-1	Not available
Sodium iodate	7681-55-2	119 mg/kg, mouse, ipr

PHYSICAL DATA

Boiling Point:	≃209° F (≃98.3° C)
Specific Gravity:	Not known
Vapor Density (air=1):	≃1
Appearance:	Dark purple-red liquid
Odor:	Slight vinegar
Solubility in Water:	Complete
Evaporation Rate (Butyl Acetate=1):	<1

FIRE AND EXPLOSION DATA

Flash Point:	Not known.
Fire and Explosion Hazards:	Combustible liquid. No fire hazards currently known.
Extinguishing Media.	Use carbon dioxide or dry chemical for small fires. Use alcohol type foam for large fires.
Special Fire Fighting Instructions	Application of water fog/spray will aid in keeping fire-exposed materials cool. An approved self-contained breathing apparatus should be worn to prevent exposure to products of combustion.

REACTIVITY DATA

Materials/Conditions to Avoid:	Strong oxidizing agents, alkalies, or acids can alter the staining characteristics of this solution.
Hazardous Decomposition Products:	Incomplete combustion may produce carbon dioxide and/or carbon monoxide.
Hazardous Polymerization:	Does not occur

HEALTH HAZARD DATA

Airborne Exposure Limit:	200 ppm
Symptoms of Overexposure:	Breathing of vapors may cause drowsiness and headaches. Ingestion may result in vomiting, nausea, or inebriation. Short-term, non-repeated contact may cause eye and mild skin irritation. IARC (Monograph 44) has determined ethanol to be a human carcinogen with chronic alcoholic beverage consumption. Since the intended use of this product is for laboratory use, no carcinogenic hazard to the user are likely.
Personal Protective Procedures Eye Protection:	Use chemical, splashproof goggles.
Skin Protection:	Use chemical resistant gloves or other clothing to prevent skin contact.
Respiratory Protection:	If airborne concentration is beyond acceptable level, use appropriate NIOSH approved respirator.
Ventilation:	General room ventilation is usually adequate. Mechanical ventilation should be explosion proof.
First Aid Procedures Eye:	Immediately flush eyes with lukewarm water for at least 15 minutes.
Skin:	Remove contaminated clothing. Wash skin with mild soap and water. Flush 15 minutes with water.
Inhalation:	If overcome by exposure, remove the person to fresh air. Administer oxygen or artificial respiration as needed.
Ingestion.	Contact poison center and obtain medical attention immediately.

STORAGE, SPILLS, AND DISPOSAL DATA

Handling and Storage.	Store at room temperature. Keep container closed when not in use. Do not store in direct sunlight.
Spill Procedure:	Absorb liquid onto paper toweling or other absorbent material. Incinerate the contaminated absorbent. Large spills should be contained and collected for disposal. Decolorize the stained area with an acid solution.
Waste Disposal.	Incinerate where permitted by Federal, State, and local regulations

The information provided in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is intended for use by persons having technical skill and is to be used at their own discretion and risk.

SHANDON LIPSHAW MATERIAL SAFETY DATA SHEET

IDENTIFICATION

Product Name: Gill®2 Hematoxylin

Date: March 1993
Supercedes: January 1991

Manufacturer/Distributor: Shandon Inc.
171 Industry Drive
Pittsburgh, PA 15275

Product Information Phone: 1-800-245-6212
24 Hour Emergency Contact: USA CHEM-TEL INC. 1-800-255-3924
outside USA CHEM-TEL INC. (813) 979-0626

INGREDIENTS	CAS NO.	LD_{50}
Ethylene glycol	107-21-1	4700 mg/kg, rat, oral
Alum Sulfate	10043-01-3	6207 mg/kg, rat, oral
Less than 1%: Hematoxylin	517-28-2	Not available
Glacial acetic acid	64-19-7	3530 mg/kg, rat, oral
Sodium iodate	7681-55-2	119 mg/kg, mouse, ipr

PHYSICAL DATA

Boiling Point:	≃273°F (≃133.9°C)
Specific Gravity:	1.040
Vapor Density (air=1):	>1
Appearance:	Dark purple-red liquid
Odor:	Faint vinegar
Solubility in Water:	Complete
Evaporation Rate (Butyl Acetate=1):	<1

FIRE AND EXPLOSION DATA

Flash Point:	Not known
Fire and Explosion Hazards:	Combustible liquid. No fire hazards currently known.
Extinguishing Media:	Use carbon dioxide, dry chemical, alcohol foam, or water fog.
Special Fire Fighting Instructions:	Application of water fog/spray will aid in keeping fire-exposed materials cool. An approved self-contained breathing apparatus should be worn to prevent exposure to products of combustion.

REACTIVITY DATA

Materials/Conditions to Avoid:	Strong oxidizing agents, alkalies, or acids can alter the staining characteristics of this solution.
Hazardous Decomposition Products:	Incomplete combustion may produce carbon dioxide and/or carbon monoxide.
Hazardous Polymerization:	Does not occur.

HEALTH HAZARD DATA

Airborne Exposure Limit:	50 ppm
Symptoms of Overexposure:	Prolonged or repeasted overexposure to vapors may have toxic effects on kidney, liver, blood, or central nevous system. Absorption through skin may cause kidney damage and depression of central nervous system. Prolonged or repeated contact results in skin irritations. Direct contact irritates the eyes.
Personal Protective Procedures	
Eye Protection:	Use chemical, splashproof goggles.
Skin Protection:	Use chemical resistant gloves or other clothing to prevent skin contact.
Respiratory Protection:	If airborne concentration is beyond acceptable level, use appropriate NIOSH approved respirator.
Ventilation:	General room ventilation is usually adequate.
First Aid Procedures	
Eye:	Immediately flush eyes with lukewarm water for at least 15 minutes.
Skin:	Remove contaminated clothing. Wash skin with mild soap and water. Flush 15 minutes with water.
Inhalation:	If overcome by exposure, remove the person to fresh air. Administer oxygen or CPR as needed.
Ingestion:	Contact poison center and obtain medical attention immediately.

STORAGE, SPILLS, AND DISPOSAL DATA

Handling and Storage:	Store at room temperature. Keep container closed when not in use. Do not store in direct sunlight.
Spill Procedure:	Absorb liquid on paper toweling or other absorbent material. Incinerate the absorbent. Decolorize the stained area with an acid solution.
Waste Disposal:	Incinerate where permitted by Federal, State, and local regulations. Incinerator should be equipped with afterburner and scrubber.

The information provided in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is intended for use by persons having technical skill and is to be used at their own discretion and risk.

Material Safety Data Sheet

General Information

Flex 100

Date Issued: 9-1-91
Replaces: 9-1-90

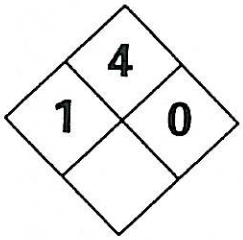
Patent Number: 4,911,915

Manufacturer:
Richard-Allan Medical Industries
8850 M89 Box 351
Richland, MI 49083
616 629 5811

CHEMTREC: 800 424 9300 For transportation emergencies

Chemical Family: Alcohols

Hazard Symbology



Health Hazard
4 Deadly
3 Extreme danger
2 Hazardous
1 Slightly hazardous
0 Normal material

Fire Hazard Flash Points
4 Below 73° F
3 Below 100° F
2 Above 100° F, not exceeding 200° F
1 Above 200° F
0 Will not burn

Reactivity
4 May detonate
3 Shock & heat may detonate
2 Violent chemical change
1 Unstable if heated
0 Stable

Specific Hazard
ACID - Acid
ALK - Alkali
COR - Corrosive
OXY - Oxidizer
P - Polymerization
☢ - Radioactive
W - Use No Water

Hazardous Ingredients

Ingredients	Composition	CAS No.	PEL 8 hr. TWA	STEL	Agency
Isopropanol	60% +/- 3% v/v	67-63-0	400 ppm	500 ppm	OSHA, ACGIH
Methanol	40% +/- 3% v/v	67-56-1	200 ppm	250 ppm	OSHA, ACGIH

Physical Data

Appearance and odor: Water white liquid. Mild characteristic odor.
Boiling Point: 71.7 - 81.1° C (161 - 178° F)
Evaporation Rate: 3.3 (Butyl Acetate = 1)
Percent Volatile by Volume: 100%
Solubility in Water: Complete
Specific Gravity: 0.790 @ 21°C (Water = 1)
Vapor Density: 1.5 (Air = 1)
Vapor Pressure: 55 mm Hg

RICHARD-ALLAN

Flex 100

Emergency and First Aid Procedures

Skin Contact: Remove contaminated clothing (including shoes) immediately. Wash the affected area of your body with soap or mild detergent and large amounts of water until no evidence of the chemical remains - at least 15 to 20 minutes.

Eye Contact: In case of eye contact, immediately flush eye with plenty of water for at least 15 minutes, occasionally lifting upper and lower lids. Call a physician. If you have appreciable eye irritation from a splash or excessive exposure, you should be referred to an opthamologist for evaluation.

Inhalation: If affected by vapors, move patient to fresh air immediately. If breathing is difficult , administer oxygen. If breathing has stopped, give artificial respiration. Keep the affected person warm and at rest.

Ingestion: Immediately drink two glasses of water and induce vomiting by either giving Ipecac syrup or by placing finger at back of throat. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Spill, Leak, and Disposal Procedures

Emergencies: If a spill of appreciable quantity occurs, leave the area quickly unless you have specific emergency duties. Do not touch spilled material. Designated person may stop the leak and shut off ignition sources if these procedures can be done without risk. Designated persons should isolate the hazard area and deny entry except for necessary people protected by suitable protective clothing and respirators adequate for the exposure. Use water spray to reduce vapors. Do not smoke, and prohibit all flames or flares in the hazard area.

Occupational Spill: For small containers, place the leaking container in a well ventilated area. Take up small spills with absorbent material and transfer to hood. Place the waste into properly labeled containers for later disposal. For larger spills, dike the spill to minimize contamination and facilitate salvage or disposal. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers. Prevent run-off to sewers, streams, or other bodies of water. Your employer must comply with EPA rules regarding the clean-up of toxic waste and notify state and local authorities, if required.

Waste Disposal: Your employer must dispose of waste containing alcohols in accordance with applicable local, state and federal laws (each has unique requirements) and in a manner that minimizes exposure of employees at the site and of the clean-up crew. Flex 100 is considered to be a hazardous waste - Hazardous waste code D001.

Shipping Information

Storage Conditions: Keep container closed. Keep away from heat and open flame. Store at room temperature: 15 - 30°C (59 - 86°F)

Transportation: DOT shipping name is 'Flammable Liquid N.O.S.'. DOT hazard class is 'Flammable Liquid'.

Shipping Containers: Drums, Bottles.

Material Safety Data Sheet

Fire and Explosion Hazard Data

Flammability Class (OSHA): IB
Flash Point (TCC): 12.2°C (53.9°F) Closed Cup
Flammable Limits in Air; % by Volume:
LOWER 2.0
UPPER 36

Extinguishing Media: Alcohol foam, dry chemicals, carbon dioxide, water in flooding amounts as a fog. Solid streams may not be effective. Cool fire-exposed containers with water from side until well after fire is out. Use of water spray to flush spills can also dilute the spill to produce non-flammable mixtures. Water runoff, however, should be contained for treatment.

Special Fire and Explosion Hazards: Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge, or other sources at locations distant from material handling point.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus with a full face piece operated in the positive pressure demand mode when fighting fires.

Reactivity Data

Stability: Stable.

Incompatibility: Avoid contact with strong oxidizing agents.

Hazardous Decomposition: Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide.

Hazardous Polymerization: None.

Health Hazard Data

Skin Effects: Prolonged or repeated contact can cause moderate irritation, defatting, dermatitis.

Eye Effects: Can cause severe irritation, redness, tearing, blurred vision.

Systemic Effects

Ingestion: Can cause gastrointestinal irritation, nausea, vomiting, diarrhea, blindness, death.

Inhalation: Excessive inhalation of vapors can cause nasal and respiratory irritation, central nervous system effects including dizziness, weakness, fatigue, nausea, headache, unconsciousness, and even death.

Chronic Effects of Exposure

Overexposure to this material, or its components, has been suggested as a cause of the following effects in humans: Liver abnormalities, eye damage, and kidney damage.

Protective Equipment

Ventilation: General mechanical ventilation or fume hood.

Personal Protective Equipment: Chemical resistant gloves; chemical splash goggles; and NIOSH/MSHA approved respirators are advised in the absence of proper environmental control.

EXXON CHEMICAL

MATERIAL SAFETY DATA SHEET

EXXON CHEMICAL AMERICAS, P.O. BOX 3272, HOUSTON, TEXAS 77001
A Division of EXXON CHEMICAL COMPANY, A Division of EXXON CORPORATION

XYLENE

PAGE: 1
DATE PREPARED: MAY 13, 1991
NO.: 92971651

SECTION 1 PRODUCT IDENTIFICATION & EMERGENCY INFORMATION

PRODUCT NAME: XYLENE LS01000

CHEMICAL NAME:
Para-Depleted Xylene and Ethylbenzene CAS 1330-20-7

CHEMICAL FAMILY:
Aromatic Hydrocarbon

PRODUCT DESCRIPTION:
Aromatic odor.
Clear, colorless liquid.

EMERGENCY TELEPHONE NUMBERS: EXXON CHEMICAL AMERICAS 713-870-6000
CHEMTREC 800-424-9300

SECTION 2 HAZARDOUS INGREDIENT INFORMATION

The composition of this mixture may be proprietary information. In the event of a medical emergency, compositional information will be provided to a physician or nurse. This product is hazardous as defined in 29 CFR1910.1200, based on the following compositional information:

COMPONENT	OSHA HAZARD
Xylenes	Flammable
Ethylbenzene	OSHA PEL;ACGIH TLV
	Eye Irritant

For additional information see Section 3.

SECTION 3 HEALTH INFORMATION & PROTECTION

NATURE OF HAZARD

EYE CONTACT:
Irritating, but does not injure eye tissue.

SKIN CONTACT:
Frequent or prolonged contact may irritate.
Low order of toxicity.
Occasional brief contact with the liquid will not result in significant irritation unless evaporation is impeded.
Skin contact may aggravate an existing dermatitis condition.

INHALATION:
High vapor/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death.
Negligible hazard at ambient temperature (-18 to 38 Deg C; 0 to 100 Deg F)

INGESTION:
Small amounts of this product aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death.
Low order of toxicity.

Post-it® Fax Note 7671	Date 11-8	# of pages ▶ 5
To Trish	From Lynda	
Co./Dept.	Co. Gas Supply	
Phone #	Phone #	

EXXON CHEMICAL

MATERIAL SAFETY DATA SHEET

EXXON CHEMICAL AMERICAS, P.O. BOX 3272, HOUSTON, TEXAS 77001
A Division of EXXON CHEMICAL COMPANY, A Division of EXXON CORPORATION

FIRST AID

EYE CONTACT:
Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

SKIN CONTACT:
Flush with large amounts of water; use soap if available.
Remove grossly contaminated clothing, including shoes, and launder before reuse.

INHALATION:
Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

INGESTION:
If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

ACUTE TOXICITY DATA IS AVAILABLE UPON REQUEST.

WORKPLACE EXPOSURE LIMITS

OSHA REGULATION 29CFR1910.1000 REQUIRES THE FOLLOWING PERMISSIBLE EXPOSURE LIMITS:
A TWA of 100 ppm (435 mg/m3) and a STEL of 150 ppm (655 mg/m3) for Xylenes.
A TWA of 100 ppm (435 mg/m3) and a STEL of 125 ppm (545 mg/m3) for Ethyl Benzene.

THE ACGIH RECOMMENDS THE FOLLOWING THRESHOLD LIMIT VALUES:
A TWA of 100 ppm (434 mg/m3), and a STEL of 150 ppm (651 mg/m3) for Xylene ,
a TWA of 100 ppm (434 mg/m3), and a STEL of 125 ppm (543 mg/m3) for Ethyl Benzene.

PRECAUTIONS

SPECIAL PRECAUTIONS:
Health studies have shown that many petroleum hydrocarbons pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

PERSONAL PROTECTION:
For open systems where contact is likely, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where contact may occur, wear safety glasses with side shields.
Where concentrations in air may exceed the limits given in this Section and engineering, work practice or other means of exposure reduction are not adequate, NIOSH/MSHA approved respirators may be necessary to prevent overexposure by inhalation.

VENTILATION:
The use of mechanical dilution ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures, or is agitated.
Use explosion-proof ventilation equipment.

EXXON CHEMICAL

MATERIAL SAFETY DATA SHEET

EXXON CHEMICAL AMERICAS, P.O. BOX 3272, HOUSTON, TEXAS 77001
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XYLENE

SECTION 4 FIRE & EXPLOSION HAZARD

FLASHPOINT: 80 Deg F. METHOD: TCC
FLAMMABLE LIMITS: LEL: 1.0 UEL: 7.0
AUTOIGNITION TEMPERATURE: 930 Deg F. NOTE: Approximate

GENERAL HAZARD:
Flammable Liquid, can release vapors that form flammable mixtures at temperatures at or above the flashpoint.
Toxic gases will form upon combustion.
Static Discharge, material can accumulate static charges which can cause an incendiary electrical discharge .
"Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.
Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.

FIRE FIGHTING:
Use water spray to cool fire exposed surfaces and to protect personnel.
[illegible] spray to disperse the vapors.
Use foam or dry chemical to extinguish fire.
Respiratory and eye protection required for fire fighting personnel.
Avoid spraying water directly into storage containers due to danger of boilover.
This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

HAZARDOUS COMBUSTION PRODUCTS:
Fumes, smoke, and carbon monoxide.

SECTION 5 SPILL CONTROL PROCEDURE

LAND SPILL:
Eliminate sources of ignition. Prevent additional discharge of material, if possible to do so without hazard. For small spills implement cleanup procedures; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is subject to CERCLA reporting (see Section 7) notify the National Response Center.
Prevent liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust.
Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent.
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

EXXON CHEMICAL

MATERIAL SAFETY DATA SHEET

EXXON CHEMICAL AMERICAS, P.O. BOX 3272, HOUSTON, TEXAS 77001
A Division of EXXON CHEMICAL COMPANY, A Division of EXXON CORPORATION

WATER SPILL:
Remove from surface by skimming or with suitable adsorbents. If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in non-confined waters.
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

SECTION 6 NOTES

HAZARD RATING SYSTEMS:
This information is for people trained in:
National Paint & Coatings Association's (NPCA)
Hazardous Materials Identification System (HMIS)
National Fire Protection Association (NFPA 704)
Identification of the Fire Hazards of Materials

	NPCA-HMIS	NFPA 704
HEALTH	2	2
FLAMMABILITY	3	3
REACTIVITY	0	0

KEY
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

SECTION 7 REGULATORY INFORMATION

DEPARTMENT OF TRANSPORTATION (DOT):
DOT PROPER SHIPPING NAME:
XYLENE, Flammable Liquid UN 1307
DOT HAZARD CLASS: Flammable liquid
DOT IDENTIFICATION NUMBER: UN 1307
NAME: Xylenes

TSCA:
This product is listed on the TSCA Inventory as a UVCB (Unknown, Variable Composition or Biological) Chemical at CAS Registry Number 1330-20-7

CERCLA:
If the reportable quantity of this product is accidentally spilled, the incident is subject to the provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and must be reported to the National Response Center by calling 800-424-8802.
The reportable spill quantity of this product is 1,000 pounds.
This product contains:
Xylene, Ethyl Benzene.

SARA TITLE III:
Under the provisions of Title III, Sections 311/312 of the Superfund Amendments and Reauthorization Act, this product is classified into the following hazard categories:
Immediate health, Delayed Health, Fire.
This product contains the following Section 313 Reportable Ingredients:

COMPONENT	CAS NO.	MAXIMUM %
Xylene	1330-20-7	83.0
Ethyl Benzene	100-41-4	17.0

EXXON CHEMICAL

MATERIAL SAFETY DATA SHEET

EXXON CHEMICAL AMERICAS, P.O. BOX 3272, HOUSTON, TEXAS 77001
A Division of EXXON CHEMICAL COMPANY, A Division of EXXON CORPORATION

XYLENE

DATE PREPARED: MAY 13, 1991
NO.: 92971651

SECTION 8 TYPICAL PHYSICAL & CHEMICAL PROPERTIES

SPECIFIC GRAVITY:
0.87 at 60

SOLUBILITY IN WATER, WT. % AT °F:
Less Than 0.10 at 68

SP. GRAV. OF VAPOR, at 1 atm (Air=1):
3.66

EVAPORATION RATE, n-Bu Acetate=1:
0.8

VAPOR PRESSURE, mmHg at °F:
19 at 100

VISCOSITY OF LIQUID, CST AT °F:
1 at 77

FREEZING/MELTING POINT, °F:
-65

BOILING POINT, °F:
282 to 288

SECTION 9 REACTIVITY DATA

STABILITY:
Stable

HAZARDOUS POLYMERIZATION:
Will not occur

CONDITIONS TO AVOID INSTABILITY:
Not Applicable

MATERIALS AND CONDITIONS TO AVOID INCOMPATIBILITY:
Strong oxidizing agents, concentrated nitric and sulphuric acids, halogen, and molten sulphur. Temperatures above ambient.

HAZARDOUS DECOMPOSITION PRODUCTS:
None

SECTION 10 STORAGE AND HANDLING

ELECTROSTATIC ACCUMULATION HAZARD:
Yes, use proper grounding procedure

STORAGE TEMPERATURE, °F:
Ambient

STORAGE/TRANSPORT PRESSURE, mmHg:
Atmospheric

LOADING/UNLOADING TEMPERATURE, °F:
Ambient

VISC. AT LOADING/UNLOADING TEMP., cST:
1

REVISION SUMMARY:
Since MAY 9,1991 this MSDS has been revised in Section(s):
3, 4

REFERENCE NUMBER:	DATE PREPARED:	SUPERSEDES ISSUE DATE:
HDHA-C-25057	May 13,1991	May 9,1991

FOR ADDITIONAL PRODUCT INFORMATION, CONTACT YOUR TECHNICAL SALES REPRESENTATIVE
FOR ADDITIONAL HEALTH/SAFETY INFORMATION, CALL 713-870-6885

MATERIAL SAFETY DATA SHEET

AMERICLEAR CLEARING SOLVENT

STEPHENS SCIENTIFIC
107 RIVERDALE ROAD
RIVERDALE, NEW JERSEY 07457
(201) 831-9800 U.S.A. 8:00 a.m. - 5:00 p.m. EST

1. SUBSTANCE IDENTIFICATION

SUBSTANCE: **AMERICLEAR CLEARING SOLVENT**

TRADE NAMES/SYNONYMS: Orange Terpenes

2. HAZARD COMPOSITION AND INGREDIENTS INFORMATION

CHEMICAL NAME	CAS NO.	PERCENTAGE	OSHA PEL	ACGIH TLV	OTHER
D Limonene Isomers of Limonene	5989-27-5	90% - 96% ≤ 4%	None	None	None

3. HAZARDS IDENTIFICATION BY NUMBER

CERCLA RATINGS (SCALE 0-3)	Health=1	Fire=2	Reactivity=0	Persistence=0
NFPA RATINGS (SCALE 0-4)	Health=1	Fire=2	Reactivity=0	

WARNING, COMBUSTIBLE LIQUID:

Americlear is a clear to colorless liquid with an odor reminiscent of citrus.

4. PRIMARY ROUTES OF ENTRY

The primary routes of exposure are eye or skin contact, inhalation, ingestion.

FIRST AID PROCEDURES:

INHALATION: MILD IRRITANT

*******FIRST AID* - Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

SKIN CONTACT: MILD IRRITANT

*******FIRST AID* - Wash affected area with soap and water. Flush with large amounts of water. If irritation persists, call a physician immediately.

EYE CONTACT: IRRITANT.

**FIRST AID - Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.

INGESTION: MILDLY TOXIC.

**FIRST AID - Administer water or milk to dilute. Contact a physician or local poison control center.

5. FIRE FIGHTING PROCEDURES

UNUSUAL FIRE AND EXPLOSION HAZARDS: Reacts explosively with iodine pentafluoride + tetrafluoroethylene (the pentafluoride reacts exothermically with the inhibitor and initiates explosive polymerization of the TFE). When heated to decomposition it emits acrid smoke and irritating fumes.

FIRE AND EXPLOSION HAZARD: **Combustible liquid. Keep away from heat, sparks, and flame.**

FLASH POINT: Closed cup 112°F
FLAMMABLE LIMITS: LEL: 0.7% UEL: 6.1%

EXTINGUISHING MEDIA:

SPECIAL FIRE FIGHTING PROCEDURE: Wear protective clothing to prevent contact with skin and eyes.

EXTINGUISHING MEDIA: Use CO_2, foam or dry chemical.

FIRE RESPONSE PROCEDURES: Keep unnecessary people away, isolate hazard area and deny entry. Avoid breathing vapors, stay upwind. Do not enter fire area without structural fire fighter's protective equipment including NIOSH approved self contained breathing apparatus in positive pressure mode. Use carbon dioxide extinguisher or foam for small fires. Large fires are best controlled by alcohol foam, fog or water spray. Move container from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Stay away from ends of tanks. For massive fire in cargo area, use unmanned hose holder or monitor nozzles. If this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire. Isolate for 1/2 mile in all directions if tank, railcar or tank truck is involved in fire. (1993 Emergency Response Guidecook, DOT P 1800.5, guide page 27). Extinguish only if fire can be stopped. Use flooding amounts of water as a fog. Solid streams may be ineffective. Cool containers with flooding amounts of water for as far a distance as possible. Avoid breathing vapors. Keep upwind. If fire is uncontrollable or containers are exposed to direct flames, water may be ineffective (NFPA 325M, Fire Hazard Properties of Flammable and Combustible Liquids, Gases and Volatile Solids, 1993). Fire fighters should wear full protective clothing and NIOSH approved self contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Water may be used to flush spills away from exposures and to dilute spills to non-combustible mixtures.

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL SPILL
Shut off ignition sources. Stop leak if you can do it without risk. Use water spray to reduce vapors. For small spills, take up with sand or other absorbent material and place into containers for later disposal. For larger spills, dike far ahead of spill for later disposal. No smoking, flames or flares in hazard area. Dispose of material in accordance with federal, state, and local regulations. Keep unnecessary people away, isolate hazard area and deny entry.

REPORTABLE QUANTITY (RQ): None established.

7. HANDLING AND STORAGE

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE. FOR ASSISTANCE, CONTACT THE DISTRICT DIRECTOR OF THE ENVIRONMENTAL PROTECTION AGENCY.

STORE IN ACCORDANCE WITH 29CFR 1910.176

BONDING AND GROUNDING: SUBSTANCES WITH LOW ELECTROCONDUCTIVITY, WHICH MAY BE IGNITED BY ELECTROSTATIC SPARKS, SHOULD BE STORED IN CONTAINERS WHICH MEET THE BONDING AND GROUNDING GUIDELINES SPECIFIED IN NFPA 77-1993, RECOMMENDED PRACTICE ON STATIC ELECTRICITY.
STORE AWAY FROM INCOMPATIBLE SUBSTANCES.

Store in a well ventilated place, away from sources of ignition and direct sunlight. Store at 15°C to 30°C (59°F to 86°F).

General Handling: Keep away from heat, sparks and flame. Keep container tightly closed and upright to prevent leakage. Use only with adequate ventilation. Prevent buildup of vapors. Extinguish all pilot lights and turn off heater, non explosion-proof electrical equipment and other sources of ignition during use and until all vapors are gone. Avoid contact with eyes. Avoid prolonged or repeated breathing of vapor. Avoid prolonged or repeated contact with skin.

8. EXPOSURE CONTROL (PERSONAL PROTECTION)

VENTILATION:

Provide local exhaust or general dilution ventilation to meet published exposure limits. Ventilation equipment must be explosion-proof.

RESPIRATION:

The following respirators and maximum use concentrations are recommendations by the U S. Department of Health and Human Services, NIOSH Pocket Guide to Chemical Hazards; NIOSH criteria documents or by the U.S. Department of Labor, 29 CFR 1910 Subpart Z, 1910.134

The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA):

1000 ppm-	Any chemical cartridge respirator with organic vapor cartridge(s). Any powered, air-purifying respirator with organic vapor cartridge(s). Any supplied-air respirator Any self-contained breathing apparatus
6250 ppm-	Any supplied-air respirator operated in a contained-flow mode.
12,500 ppm-	Any air-purifying full-face piece respirator (gas mask) with a chin style, front- or back-mounted organic vapor canister. Any self-contained breathing apparatus with a full face piece. Any supplied-air respirator with a full face piece.
20,000 ppm-	Any supplied-air respirator that has a full face piece and is operated in a pressure-demand or other positive-pressure mode.
ESCAPE-	Any air-purifying, full-face piece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister. Any appropriate escape-style, self-contained breathing apparatus.

EXPOSURE LIMITS: None established

CLOTHING

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged contact with this substance.

GLOVES

Employee must wear appropriate protective gloves to prevent contact with this substance.

EYE PROTECTION

Use chemical safety goggles and/or a full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 176°C (349°F)
VAPOR DENSITY: (Air = 1): 4.7
SPECIFIC GRAVITY: (@ 25 Deg C): 0.835-0.842
EVAPORATION RATE: (Butyl Acetate = 1): Slow

MELTING POINT: N/A
VAPOR PRESSURE: (mm Hg) @ 20°C: 1.2
SOLUBILITY IN WATER: Insoluble

Appearance and Odor: Clear to colorless liquid with an odor reminiscent of orange oil.

10. STABILITY AND REACTIVITY INFORMATION

STABILITY: Stable under normal conditions.

REACTIVITY: Will react explosively with iodine pentafluoride + tetrafluoroethylene (the pentafluoride reacts exothermically with the inhibitor and initiates explosive polymerization of the TFE). When heated to decomposition it emits acrid smoke and irritating fumes.

CONDITIONS TO AVOID: Extreme heat and open flame.

INCOMPATIBILITIES: Strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

IRRITATION DATA Mild irritant

TOXICITY DATA Mildly toxic.

CARCINOGEN STATUS: No available data on humans.
LOCAL EFFECTS: Irritant-inhalation, skin, eye.
ACUTE TOXICITY LEVEL: No data available

12. ECOLOGICAL INFORMATION

NO AVAILABLE DATA

13. DISPOSAL GUIDELINES

RCRA The unused product is a RCRA hazardous waste if discarded. The RCRA ID number is D001.
If the waste is a spent solvent, the appropriate spent solvent code should be used.

DISPOSAL SHOULD BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 40 CFR 262

OTHER DISPOSAL CONSIDERATIONS The waste material should be treated and/or disposed of at a site authorized to handle hazardous chemical waste. Appropriate Federal, State and Local Regulatory Authorities should be contacted before discharge, treatment or disposal of waste material.

The information furnished here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

HM-181 DOT DESCRIPTION: TERPENE HYDROCARBONS, N.O.S, 3, UN2319, GROUP 111

Proper shipping name. Terpene Hydrocarbons, N.O.S., (D'Limonene)
Hazard class or Division 3
Identification Numbers UN2319

Packing Group: III
Label(s) Required (if not excepted): Flammable Liquid.
Special Provisions: B1; T1; Refers to transportation of IM portable tanks

Packaging authorizations: Exceptions: 173.150; for small quantities of flammable liquids
- Non-bulk packaging: 173.203: for liquid hazardous material in packing group III
  Bulk-packaging: 173.242: for liquid hazardous material

Quantity Limitations: Passenger aircraft or railcar: 60 L Cargo aircraft only: 220L

Vessel stowage requirements: A

15. REGULATORY INFORMATION

SARA TITLE III (Superfund Amendment and Reauthorization Act)
SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355) - Not Listed
SECTION 311: Hazard Categorization (40 CFR 370) - Not Listed
SECTION 313: Toxic Chemicals Listing (40 CFR 372.65) - Not Listed

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)
SECTION 102(A) Hazardous Substances (40 CFR 302.4) - Not Listed
Reportable Quantity - Not Listed
SECTION 101(14) Reportable Quantity - Not Listed

RCRA (Resource Conservation and Recovery Act.)
40 CFR 261.33 Hazardous Waste Number: D001

NJ-RTK (New Jersey- State Right To Know)
Environmental Hazardous Substance List: Not Listed

DEA (Drug Enforcement Agency)
T960 (Terpene Hydrocarbons) - Not Listed

TSCA (Toxic Substance Control Act)
Not Listed in TSCA Inventory

WHMIS (Workplace Hazardous Material Information System) Classification (Canada):
Not Listed

FOREIGN INVENTORY STATUS:
Canadian DSL (Domestic Substances List) - Not Listed
EINECS (European Inventory of Existing Commercial Chemical Substances) - Not Listed

16. OTHER INFORMATION

See product specification sheet for complete label text information.
Americlear Clearing Solvent, as manufactured by Stephens Scientific, is intended for legal use in laboratories and manufacturing environments.